Complete Summary

GUIDELINE TITLE

American Gastroenterological Association medical position statement: guidelines on intestinal ischemia.

BIBLIOGRAPHIC SOURCE(S)

American Gastroenterological Association Medical Position Statement: guidelines on intestinal ischemia [published erratum appears in Gastroenterology 2000 Jul;119(1):280-1]. Gastroenterology 2000 May;118(5):951-3.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Ischemic bowel disease, including, acute mesenteric ischemia, chronic mesenteric ischemia, and colon ischemia (a spectrum of disorders including reversible colopathy, transient colitis, chronic colitis, stricture, gangrene, and fulminant universal colitis)

GUIDELINE CATEGORY

Diagnosis
Management
Risk Assessment
Treatment

CLINICAL SPECIALTY

Colon and Rectal Surgery
Family Practice
Gastroenterology
Internal Medicine

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

- To help physicians identify patients with acute mesenteric ischemia who require prompt and aggressive evaluation and delineation of the optimal form of therapy
- To help physicians identify patients with chronic mesenteric ischemia and determine the best means of re-establishing adequate intestinal blood flow
- To help physicians identify patients with colon ischemia, including, reversible colopathy, transient colitis, chronic colitis, stricture, gangrene, and fulminant universal colitis and determine a course of treatment in cases that do not resolve spontaneously

TARGET POPULATION

- Patients at risk for acute mesenteric ischemia as well as patients suspected of having chronic mesenteric ischemia or colon ischemia
- Patients with ischemic bowel disease, including acute mesenteric ischemia, chronic mesenteric ischemia, and colon ischemia (a spectrum of disorders including reversible colopathy, transient colitis, chronic colitis, stricture, gangrene, and fulminant universal colitis)

INTERVENTIONS AND PRACTICES CONSIDERED

Acute Mesenteric Ischemia

Diagnosis

1. Plain x-ray films of the abdomen
2. Duplex sonography (Doppler ultrasonography)
3. Computed tomography (CT), including spiral computed tomography or computed tomography angiography
4. Abdominal angiogram
5. Magnetic resonance imaging (MRI) angiography

Treatment

1. Exploratory laparotomy
2. Surgical embolectomy
3. Arterial reconstruction and/or resection
4. Re-exploration ("second-look" surgery)
5. Thrombolytic agents, such as, streptokinase, urokinase, and recombinant tissue plasminogen activator
6. Heparin
7. Coumadin
8. Continuous papaverine infusion

Chronic Mesenteric Ischemia

Diagnosis

1. Clinical symptoms
2. Doppler ultrasound
3. Magnetic resonance angiography (MRA)
4. Spiral computed tomography

Treatment

1. Splanchnic angiography
2. Surgical revascularization
3. Percutaneous transluminal mesenteric angioplasty (PTMA) with or without stent

Colonic Ischemia

Diagnosis

1. Colonoscopy
2. Barium enema

Treatment

1. Bowel rest
2. Correction of precipitating conditions
3. Intravenous fluids (nothing by mouth for 48-72 hours)
4. Antibiotics
5. Laparotomy
6. Resection of involved bowel
7. Corticosteroids and other agents conventionally used to treat inflammatory bowel disease (considered but not recommended)

MAJOR OUTCOMES CONSIDERED

- Sensitivity and specificity of diagnostic tests
- Risk of intestinal ischemia
- Mortality/survival
- Relief of symptoms
- Recurrence rates
- Graft/vessel patency rates
- Clinical/technical success
- Procedure mortality

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Subjective Review

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analysis were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

This document was approved by the Clinical Practice and Practice Economics Committee on September 25, 1999 and by the American Gastroenterological Association Governing Board on November 15, 1999.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The spectrum of ischemic bowel disease comprises acute and chronic mesenteric ischemia and colon ischemia and includes arterial as well as venous disorders. Each form of intestinal ischemia requires its own plan of diagnosis and management. In the absence of randomized controlled trials or similar forms of scientific inquiry, the diagnostic and therapeutic algorithms presented here are based on descriptive series and clinical experience.

Acute Mesenteric Ischemia

Acute mesenteric ischemia (AMI) can result from emboli, arterial and venous thrombi, or vasoconstriction secondary to low flow. Mortality rates reported over the last 15 years remain as high as they did more than 70 years ago and average 71%, with a range of 59%-93%. Diagnosis before intestinal infarction is the single most important factor to improve these poor results. Relief of persistent vasoconstriction, which is the cause of nonocclusive mesenteric ischemia and occurs in association with occlusive forms of ischemia, is another important factor. The objectives of this guideline for the management of acute mesenteric ischemia are early identification of patients who require prompt and aggressive evaluation in addition to delineation of the optimal form of therapy for each patient.

Patients at risk for acute mesenteric ischemia, as defined in the technical review, who have abdominal pain severe enough to call to the attention of a physician, whose pain persists for more than 2 or 3 hours, and whose clinical picture does not suggest some other abdominal problem, e.g., cholecystitis or diverticulitis, should be evaluated and treated for acute mesenteric ischemia according to algorithm 1 in the original guideline document.

Chronic Mesenteric Ischemia

Chronic mesenteric ischemia (CMI; "intestinal angina") is characterized by postprandial abdominal pain and marked weight loss and is caused by repeated transient episodes of inadequate intestinal blood flow, usually provoked by the increased metabolic demands associated with digestion. Because angiographic evidence of partial or complete occlusions of one or more of the major splanchnic vessels is common in the absence of chronic mesenteric ischemia, such abnormalities alone are not sufficient to diagnose chronic mesenteric ischemia. Many tests have been proposed for use in diagnosing chronic mesenteric ischemia, but none has proven sufficiently sensitive or specific. The objectives of this guideline are to help the physician identify patients with chronic mesenteric ischemia and determine the best means of re-establishing adequate intestinal blood flow (see Algorithm 2 in the original guideline document).

Colon Ischemia

Colon ischemia (CI) is the most common form of intestinal ischemia and comprises a spectrum of disorders: (1) reversible colopathy, (2) transient colitis, (3) chronic colitis, (4) stricture, (5) gangrene, and (6) fulminant universal colitis. Most cases of colon ischemia do not have a recognizable cause; however, colon ischemia is seen in a number of predisposing conditions. Any patient who develops mild-to-moderate abdominal pain, diarrhea, or lower intestinal bleeding with minimal-to-moderate abdominal tenderness, especially one who has one of the predisposing conditions, should be investigated for colon ischemia. Diagnosis

is by colonoscopy or barium enema, and mesenteric angiography plays little role in diagnosis unless only the right side of the colon is affected or the individual has more pain than is customarily seen with colon ischemia. Most cases of colon ischemia resolve spontaneously, but surgery may be required acutely, subacutely, or in chronic cases as described in the technical review (see Algorithm 3 in the original guideline document).

Conclusion

The spectrum of ischemic bowel disease is broad, and each type of ischemic injury requires its own unique plan of management. In general, such plans have been developed on the basis of descriptive studies and clinical experience, not on randomized controlled trials or other highly reliable forms of scientific inquiry. However, certain fundamentals seem evident.

First, patients with acute mesenteric ischemia must be identified early in the clinical course of the disease and treated aggressively if the chance of survival is to be improved. The diagnosis should be suspected when individuals, especially those at high risk for acute mesenteric ischemia, develop severe and persisting abdominal pain that is disproportionate to their abdominal findings. Such persons should undergo mesenteric angiography if another cause for the pain cannot be found on plain x-ray film studies of the abdomen or computed tomography scan, followed by surgery if angiography shows a vascular cause for the pain. The role of vasodilators is clear for nonocclusive mesenteric ischemia and is strongly suggested but not as definite for occlusive disease of the superior mesenteric artery. The role of anticoagulants and thrombolytics is evolving.

Second, chronic mesenteric ischemia should be considered in any patient who develops chronic postprandial abdominal pain and weight loss in whom no diagnosis can be made from the usual diagnostic studies. Mesenteric angiography should demonstrate severe occlusion of at least two of the three splanchnic vessels, although by itself, i.e., in the absence of symptoms, an abnormal angiography result is not sufficient for diagnosis of chronic mesenteric ischemia. Treatment is either surgical or by percutaneous transluminal mesenteric angioplasty with or without stenting. Experience with angiographic treatment modalities is limited, and at present these modalities probably are best reserved for patients at high risk for surgical revascularization.

Third, colonic ischemia is the most common form of intestinal ischemia and usually has an excellent prognosis; most cases resolve spontaneously. Diagnosis is by colonoscopy or barium enema in an individual with a typical history. Mesenteric angiography plays little role in diagnosing colonic ischemia, unless only the right side of the colon is affected or the individual has more severe pain than is customarily seen with colonic ischemia, and hence acute mesenteric ischemia is suspected. Antibiotics are often used, despite an absence of good clinical evidence for their benefit. In patients who develop acute ischemic colitis, systemic corticosteroids are best avoided, and there is no evidence supporting the use of conventional agents used to treat inflammatory bowel disease. Surgery is indicated acutely for those with peritoneal signs, massive bleeding, or fulminant colitis; subacutely for those who do not improve after 2-3 weeks or who develop recurrent sepsis; and electively in cases of symptomatic ischemic stricture or chronic colitis.

CLINICAL ALGORITHM(S)

Algorithms are provided in the original guideline document for:

- Diagnosis and treatment of intestinal ischemia
- Management of chronic mesenteric ischemia
- Management of colon ischemia

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

In the absence of randomized controlled trials or similar forms of scientific inquiry, the diagnostic and therapeutic algorithms presented in the guideline and the accompanying technical review are based on descriptive series and clinical experience.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

A greater awareness of acute mesenteric ischemia, chronic mesenteric ischemia, and colon ischemia and critical evaluation of the clinical experiences may allow for earlier diagnoses, prompt therapy, and improved survival. In the case of acute mesenteric ischemia, the diagnosis before bowel ischemia becomes irreversible is the most important factor in improving patient survival, and only angiography or surgery enables such early diagnosis.

POTENTIAL HARMS

Mesenteric angiography

Problems with the use of routine angiography in patients with acute mesenteric ischemia include the following: First, difficulties in performing angiography in critically ill patients may make the study impractical and contribute to inordinate delays in surgery. Second, the large number of negative results in examinations performed to identify patients with acute mesenteric ischemia early in the course of the disease is considered by some to offset the value of the study. Third, the most serious potential drawback is the possible critical delay in the surgical correction of vascular insufficiency because angiography is not readily available. Proponents of angiography accept that the large number of negative angiography results, with their low risk of complications, is essential if diagnoses are to made early enough to improve survival.

Use of heparin anticoagulation

There is a risk of intraluminal or gastrointestinal bleeding with heparin anticoagulation.

Surgical revascularization for chronic mesenteric ischemia

The procedure mortality for surgical revascularization ranges from 0 to 16%.

Percutaneous transluminal mesenteric angioplasty for chronic mesenteric ischemia

The procedure mortality for transluminal mesenteric angioplasty ranges from 0 to 13%.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness
Safety

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

American Gastroenterological Association Medical Position Statement: guidelines on intestinal ischemia [published erratum appears in Gastroenterology 2000 Jul;119(1):280-1]. Gastroenterology 2000 May;118(5):951-3.

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1999 Nov 15 (reviewed 2001)

GUIDELINE DEVELOPER(S)

American Gastroenterological Association - Medical Specialty Society

SOURCE(S) OF FUNDING

American Gastroenterological Association

GUIDELINE COMMITTEE

American Gastroenterological Association Clinical Practice and Practice Economics Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

ENDORSER(S)

American College of Gastroenterology - Medical Specialty Society
American Society for Gastrointestinal Endoscopy - Medical Specialty Society

GUIDELINE STATUS

This is the current release of the guideline.

An update is not in progress at this time.

According to the guideline developer, the Clinical Practice Committee meets 3 times a year to review all American Gastroenterological Association guidelines. This review includes new literature searches of electronic databases followed by expert committee review of new evidence that has emerged since the original publication date.

This guideline has been reviewed by the developer and is still considered to be current as of Dec 2001.

GUIDELINE AVAILABILITY

Electronic copies: Available from the American Gastroenterological Association (AGA) Gastroenterology journal Web site.

Print copies: Available from American Gastroenterological Association, 4930 Del Ray Avenue, Bethesda, MD 20814.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Brandt LJ, Boley SJ. AGA technical review on intestinal ischemia. Gastroenterology. 2000 May;118(5):954-68. [139 references].

Electronic copies: Available from the American Gastroenterological Association (AGA) Gastroenterology journal Web site.

Print copies: Available from American Gastroenterological Association, 4930 Del Ray Avenue, Bethesda, MD 20814.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on June 5, 2002. The information was verified by the guideline developer on July 12, 2002.

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